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ABSTRACT

A study investigated Chapter 1 students' activities and experiences during the time allocated to reading instruction. Subjects, 119 fourth and fifth grade students in a large city school system (66 subjects receiving remedial instruction in an in-class setting and 53 in a pullout setting), were observed systematically over a four-month period while receiving reading instruction from their remedial reading specialists. Results indicated that: (1) setting, as it was implemented in this district, had an impact on how remedial reading specialists organized lessons, on what students experienced, and on the behaviors of the students within that setting; (2) congruence between the curriculum and instruction of developmental teachers and reading specialists was greater in the in-class than pullout programs, although the nature and extent varied greatly within the various in-class settings; (3) across both settings, the reading program appeared to be similar to what could be called a traditional skills-focused curriculum; and (4) none of the instructional variables that were hypothesized to predict reading achievement reached statistical significance. Findings suggest that although the nature of instruction did not appear to influence achievement, there were differences in the amount of total instructional time and in instructional behaviors, lesson focus, and reading behaviors experienced by the students in the in-class or pullout programs. (One figure and 11 tables of data are included; 30 references are attached.) (RS)

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Critical Features of Remedial Reading Programs: Effects of Setting on Instructional Practices, Student Activities, Congruence, and Achievement

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We would also like to express our sincere appreciation to the observers who logged over 1,200 observations during this study. We also gratefully acknowledge the work of Carol Baker in the Office of Measurement and Evaluation for her help in designing the coding system, Larry Bernstein who had a major role in the data analysis, and Donna Poljanec for her efforts in developing the graphic representations for presenting the data.

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Critical Features of Remedial Reading Programs: Effects of Setting on Instructional Practices, Student Activities, Congruence, and Achievement

INTRODUCTION

Although a great deal of financial support has been given to compensatory programs, there has been much criticism of the programs that exist. The latest national assessment of Chapter I indicated that: 1) although students receiving Chapter I services demonstrated larger standardized achievement test gains than comparable students not receiving Chapter I services, their gains did not move them substantially toward the achievement level of more advantaged students; 2) participants in math gained more than those in reading; and 3) students in the early grades gained more than students in later grades (Kennedy, et al, 1986). Slavin (1987) puts it another way: Chapter I doesn't work well enough. Achievement test gains seem to be large enough to support continued funding, but not large enough that we can be satisfied that we have made a difference.

Many concerns have been raised about the prevailing model used in Chapter I programs -- the pullout model that provides supplemental compensatory instruction to participating students. Critics of pullout programs question the lack of congruence, alignment, or linkage between the student's developmental (classroom) and remedial reading programs (Slavin, 1987; Allington & Shake, 1986; Leinhardt & Bickel, 1987). Kennedy (1986) made a strong case for the importance of congruence between the remedial and classroom programs, suggesting that when this congruence does not exist, low-achieving students are forced to establish "connections" on their own.

It is important to point out that, given that the predominant mode of

compensatory program is pullout, the lack of congruence is often attributed to the pullout nature of the remedial programs. Although proponents assume that the inclass model eliminates problems such as lack of congruence, loss of instructional time, and labeling, there is little evidence to support these assumptions. Indeed there are concerns that the inclass model may generate new problems that may also reduce program effectiveness (Bean & Eichelberger, 1985; Harpring, 1985).

Although the debate continues, there has been little systematic study of the relationship between the instructional practices of the remedial reading teacher and the classroom reading teacher and how this relationship differs in inclass and pullout programs. Given that in many remedial programs, two teachers are involved, it is essential to consider the nature of the instructional practices of both teachers to understand the impact on student activities and on student achievement. Therefore, one of the primary objectives of this study was to examine variables that affected reading achievement of students receiving instruction from both classroom and remedial reading teachers and to determine the effect of setting (inclass or pullout) on student behaviors, instructional practices of both teachers, and reading achievement. Because of the lack of knowledge about congruence and its effect on student achievement in reading when students are receiving instruction from more than one teacher, the nature and extent of congruence was studied as one of those variables.

The specific research questions of this study were:

1. What is the nature of remedial reading instruction across settings?
2. What is the nature and extent of congruence between the remedial and classroom reading programs across settings?
3. What is the nature of the total reading program received by

Chapter I students across settings?

4. What is the effect of the total reading program on year-end achievement for Chapter I students?

METHODS

This study was designed to yield information on the students' activities and experiences during the time allocated to reading instruction. It was explanatory in the sense that its purpose was to describe specific causal relationships among variables and observational in that we systematically observed Chapter I students in grades 4 and 5 with both their classroom teachers and reading specialist. The variable of congruence was also systematically measured as part of the observation protocol.

In developing a preliminary model for explaining reading improvement of low achieving students, several assumptions were made. First, we assumed that what a teacher does with students is more important than where those activities take place. Therefore, although reading instruction delivered by reading specialists was studied in two settings (pullout and inclass), setting itself was not a variable in the model. Second, we assumed that to capture teaching practices that affect reading improvement, it was necessary to document how reading teachers and students spent their time when reading is taught both by a classroom reading teacher and a reading specialist.

Data were obtained through use of a researcher developed observation instrument (SORIN). The unit of analysis throughout the study was the individual child; therefore, all additional data that were collected were gathered on each child.

Sample

This study was conducted in a large city school system in which the two different programs for remediation, inclass and pullout, existed concurrently. One hundred nineteen students (grades 4 and 5) participating in Chapter I

remedial reading programs in 12 schools (4 inclass, 8 pullout), were observed systematically over a four month period while receiving reading instruction from their remedial reading specialists. (Third grade students were also observed. To date, analyses have been completed on the fourth and fifth graders.) All students scored at the 30th percentile or below on the California Achievement Test (1987) Test Total Reading. Of the 119 students, 66 students (27F, 39M) received remedial instruction in an inclass setting and 53 (20F, 33M) in a pullout setting.

Nine reading specialists served these 119 students (one at three of the schools, another at two schools, and the remaining seven at one school each). There were 26 classroom teachers serving these students. The twelve participating schools were scattered geographically throughout the school district. Schools were chosen according to percentage of poverty, percentage of students participating in the Chapter I programs, and setting employed for remedial instruction. The level of poverty in participating schools ranged from 25% to 75% of students eligible for free lunch. The percent of school populations participating in Chapter I programs ranged from 5.0% to 9.4%. School sizes ranged from a total school population of 168 students to a school population of 476. In each developmental classroom class size did not exceed 35 students, no more than 10 of whom were identified as Chapter I students.

In the pullout setting, students left their developmental classroom at some time other than during a scheduled reading class to receive instruction from the reading specialist. There were no more than 10 students in a remedial group and students received instruction for 100 minutes per week (two and one half 40 minute periods, generally for two periods one week and then for three the following week). In the inclass setting, the reading specialist went to the classroom during a scheduled reading period, when possible. There were several cases where specialists worked with the designated students

during a language arts or social studies period. Specialists spent two and one half periods per week in the classroom, generally for two periods one week and then for three periods the following week. They were scheduled to observe for half of the 40 minute period and then work with the identified students for the remaining time (a mean of 50 minutes of instruction per week). Approval from the federal evaluators for the inclass setting as a Chapter I program, which requires that remedial instruction be supplemental, was based upon the fact that these students would be receiving more direct instruction from two teachers in lieu of independent seatwork activities.

Time allocated for total reading instruction (combination of classroom and remedial instruction) varied across schools and settings. Time for reading, as reported by school personnel, ranged from 320 minutes per week in one school to 620 minutes per week in another. The mean allocated time for remedial students in a pullout program was 495 minutes of total reading instruction in grade 4, and 485 minutes per week in grade 5. In the inclass setting, the mean allocated time was 380 minutes of total reading instruction per week for grade 4, and a mean of 370 minutes per week for grade 5.

Instrumentation

The pretest and posttest. The total reading scale scores from the California Achievement Test (CAT) (Form C), given in May 1987 were used as a pretest measure. Total reading scale scores from the California Achievement Test (Form E), administered schoolwide in May 1988, were used as the posttest measure.

Overlap. Overlap is an estimate of the correspondence between the content of the curriculum (what students studied) and the achievement measure. (Leinhardt, Zigmond, & Cooley, 1981). In this study, an estimate of overlap was obtained from the teachers. Prior to the administration of the 1988 CAT, teachers were given a list of test item objectives from the CAT for their

specific grade. Both the developmental and remedial reading teachers were asked to indicate whether a specific child had received instruction on that objective. For each child, the "yes" responses were tallied and divided by the total items possible, yielding a percent of overlap. Separate percentages were calculated for four overlap measures: percent of objectives covered by the classroom teacher, percent of objectives covered by the reading specialist, percent of objectives covered by either the reading specialist or the classroom teacher (total overlap), and percent of items covered by both the reading specialist and the classroom teacher.

The System for Observing Reading Instruction (SORIN). Observational data on teacher behaviors, lessons, and student behaviors were obtained through the SORIN, a time-sampling observation protocol that enabled the observer to specify the amount of time spent on designated instructional activities as well as on selected teacher and student behaviors. The coding system was designed by the researchers (Bean, Lazar, & Zigmond, 1987) to yield information on the environment in which remedial students live while in the classroom with their classroom or remedial reading teacher.

In developing the instrument, results of prior research concerning instructional practices related to reading achievement were used to provide some basis for determining initial observation categories (Kohnke, Miller, & Zigmond, 1986; Leinhardt & Seewald, 1981). However, new categories specifically related to the content of the reading lesson were also developed.

The SORIN is composed of three distinct sections, each yielding different types of student centered data. In one section, teacher behaviors were observed and linked to the student(s) to whom they were directed. The two basic areas of teacher behaviors recorded were instructional (those representing some form of direct instructional behavior with a student) and noninstructional (those behaviors which did not pertain to instructional

content or method).

The second section of the observation protocol permitted collection of data relative to three dimensions of the lesson: lesson focus (actual instructional content), type of materials used, and the level (word, sentence/paragraph, or selection) of the materials used.

In the final section, the observational focus was on directly observable student behaviors during reading instruction. These included direct reading behaviors and activities assumed to be related to reading. The details of this observation protocol are reported elsewhere (Bean, Lazar, & Zigmond, 1987; Bean, et al, 1989).

Observations were conducted by 11 observers, all of whom were either reading specialists or had taught reading in some context and had a working knowledge of reading terminology. Each observation session lasted 40 minutes. Using a time-sampling approach, the observer systematically observed each child in the group. Each child was observed for 5 seconds, coded for 5 seconds; then the observer followed the same process with the next child listed on the observation protocol. The observer coded the behaviors relative to the teacher, the lesson, and student behaviors. Then the cycle began again. Each child was observed seven times on each teacher behavior and lesson variable and six times on the student behavior variables for a total of twenty coding episodes for each child during each 40 minute observation session.

Observers were trained, using an instructional manual, simulation experiences, and field experiences, until they reached criterion performance on percent agreement (85%) with the trainer. After criterion was reached, interobserver reliability checks were conducted every two weeks (15% of the total observations of each observer). Interobserver reliability remained at or above criterion throughout the study (r =.85).

The observations of these 119 students took place over a 16-week period, from January through April, 1988. For each remedial class, the schedule provided for observing 40 minutes (one period) of instruction, every other week, for a total of 8 periods of instruction (5 hours and 20 minutes) over the 4 month period. For each developmental class, the schedule provided for 80 minutes (2 periods) of instruction, every other week, for a total of 16 periods of instruction (10 hours and 20 minutes) over the 4 month period. This 2 to 1 ratio of observations (2 classroom for 1 remedial) over-represented the amount of time spent with the remedial teacher, but was needed to obtain better estimates of congruence. Mathematical adjustments were made to describe the actual reading experiences of children in the two types of remedial programs.

The decision regarding when to observe in each classroom was based upon: a) the schedules of the remedial and the developmental teachers; and b) the need to observe students with both their remedial and classroom teacher on the same day or on consecutive days to obtain measures of congruence (reported in Bean, et al, 1988).

Congruence measure. Observers coded for congruence, using a congruence rating scale developed for the study, after students had been observed in both their developmental and remedial reading classes. Reliability of the congruence coding was established by having 20% of the congruence ratings coded by a second research team member; interobserver reliability coefficient was .85 or higher.

The congruence rating form focuses on five dimensions of congruence: materials, topic, prose, lesson focus, and teaching approach. (See Bean, Lazar, Cooley, Eichelberger, Zigmond, & Bernstein, 1988 for a complete description of the congruence rating form). Each dimension was rated on a scale of 0-2. In coding the materials dimension, the paired lessons received

a 2 if the materials were exactly the same (both using the same workbook page). The lessons received a 1 if the materials were similar (each using a workbook, but a different workbook or page), and the lessons received a 0 if the materials were dissimilar (one teacher used a basal and the other used a reading kit). The topic and prose dimensions were coded only when at least one of the teachers was using a text selection. When neither lesson involved a text selection, the coder marked the two dimensions as "not applicable."

The lesson focus dimension refers to the area of reading being addressed: these included vocabulary, comprehension, study skills, word attack, and sight vocabulary. If the lessons of both teachers focused on exactly the same aspect of an area of reading, lesson focus was coded as 2. If the same area (e.g., comprehension) was being addressed, but a different skill or aspect was being taught, then the congruence rating was a 1. If the two teachers were each addressing a different area, the rating was 0.

The final dimension, teaching approach, refers to the type of instructional procedures followed by the teachers. Four of the approaches were teacher-directed ones, one related to work being done independently, and a sixth one placed the teacher in a monitoring role. If both teachers used exactly the same approach, the lessons were coded as 2; if both teachers used a similar approach (e.g., both teachers were teaching a directed reading lesson, but were handling it differently - oral guided reading in one and silent guided reading in the other), the lessons were coded as a 1. If two different approaches were observed, the lessons received a score of 0.

A percent of congruence was then calculated for the two lessons across all dimensions by dividing the total score received by the total score possible. For example, a pair of lessons was coded as having a congruence score of 10% if all five dimensions of congruence could be scored, but the pair received only one point of the possible 10 points; or, a lesson set

received a score of 17% if three of the five dimensions of congruence could be scored and the pair received one point of the possible six points. The mean percent of congruence across all pairs of lessons observed was calculated for each student.

RESULTS

This section is divided into several parts, each addressing one of the questions of the study. The specific data that were used to address each question are described and the findings obtained in the study are presented in tables and described in the text.

Nature of Remedial Reading Instruction Across Settings

To address the question, "what is the nature of remedial reading instruction across settings?", the percentage of time that specific teacher behaviors, lesson foci, types of materials, levels of text and reading related behaviors occurred with reading specialists are described for the pullout and inclass settings. Based upon the raw counts obtained from the SORIN, the frequency with which students experienced various activities was obtained and the mean percent for each activity calculated. These mean percentages were converted to percent of time during a week that students spent in a specific activity to determine how total amount of time in remedial reading instruction was spent. Findings from the three sections of the SORIN are discussed separately to give a picture of the remedial instruction in the two settings with regard to how the students spent their time relative to the five categories during remedial reading instruction. Statistical analysis, using t-tests, of the differences in the percent of time spent in each category were compared across pullout and inclass settings. The significance level was set conservatively at .01 to minimize Type 1 errors that might result from the large number of comparisons made.

Results of Analysis of Observation Data

Reading Specialist behaviors. Reading specialist (RS) behaviors were divided into instructional behaviors (directly related to an instructional session) and noninstructional behaviors (no relation to instruction but represented some type of student/teacher interaction). In the pullout setting, students spent 78.1% of their time receiving instruction from

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Insert table 1 about here

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their RS and 5.7% of their time in noninstructional activities. The other 16.1% of the time was coded as "scheduled instruction ceased," (the lesson had been completed and students were waiting to return to their classrooms, a class party had begun, a guest speaker entered the room, or students were dismissed for an assembly or other school activity).

In looking specifically at instructional practices, students in the pullout setting were involved in activities in which their RS was listening to them or watching them work (Listening/Looking) 21.2% of the time. For example, students had been given a workbook assignment and the RS was observing a specific student at work, or a student was responding to RS questioning (while the RS was listening to that response). Students also received instructional information from RS through indirect interaction 14.9% of the time. In these instances, the RS was giving some type of instructional information or clarification to another student in the group but the student being observed was attending to this interaction. Students also received subject or content related information 11.7% of the time (e.g., this is how you divide words into syllables), and participated in teacher directed questioning/answering dialogues, 10.4% of the time.

The greatest amount of noninstructional RS behavior observed in the

pullout setting was time during which the teacher was away from the students doing something else (grading papers, preparing for the next segment) and there was no interaction whatsoever (2.9% of the time). When the time spent in noninstructional activities is combined with "scheduled instruction ceased", students in the pullout remedial setting spent 21.8% of their time relative to RS behaviors on activities unrelated to reading instruction.

In the remedial inclass setting, the total amount of time students spent in instructional activities was 57.1%; 17.2% of the time within the lesson was spent in noninstructional activities, and 25.6% of the time was coded as "scheduled instruction ceased." Most of the instructional time (17.0%) focused on students receiving information through indirect interaction with the RS (receiving information while the teacher gave instruction to another member of the group). Students also spent approximately 10% of their time in individual contacts with the RS (teacher helping an individual student with a worksheet), and 10% of their time in listening/looking activities (RS watching the student complete work or listening to the student respond).

The greatest amount of noninstructional lesson time for students occurred when students experienced no interaction with the teacher, that is, the teacher was away from the student. Noninstructional time during lesson spent in "no interaction" (11.3%) and in "transition" (4.2%) combined with the time coded as "scheduled instruction ceased" (25.6%), accounted for 41.1% of the total time spent in the inclass remedial setting.

There was a significant difference between settings in the percent of time designated as instructional time, with more time spent in instruction in the pullout remedial setting. Specifically, significantly more student time in the pullout setting was spent on receiving directions, participating in questioning/answering dialogues, listening/looking interactions, and feedback/acknowledgement (although little feedback was experienced by students

in either setting). Significantly more student time was spent in the inclass remedial setting in individual contacts with teachers.

There was also a significantly greater percentage of time spent in the inclass setting on noninstructional activities. Specifically, there was significantly more time spent in inclass remedial settings in "transition", "no interaction", overall total noninstructional time during lesson, and in time coded as "scheduled instruction ceased". The data do indicate greater variability in the inclass settings than in the pullout settings across several dimensions (e.g., no interaction, individual contacts).

Lesson. In this area, three different aspects of the lesson were addressed: the lesson focus, type of material used, and level of that material (word, sentence, or selection).

Lesson focus. In the pullout setting, students spent most of their time

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Insert table 2 about here

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in skill related lessons (50.0%). Text related lessons accounted for 20.2% of the weekly remedial reading instruction and independent activities accounted for 7.1% (see Table 2). When working on skill related lessons, students in the pullout setting spent the greatest percentage of time on comprehension skills (15.8%) and on word identification skills (10.3%). Study skills and testtaking accounted for 9.8% of their time (students in both settings were participating in practice activities to prepare them for the standardized test that was to be given within a month of the end of the observation period). Within the text related activities, students spent most of their time (15.2%) in the pullout remedial setting on "during reading" activities (those activities in which students are reading text silently or orally or listening to text being read).

In the inclass remedial setting, students spent most of their time (39.4%) in skill related activities, 20.8% of the time in text related activities, and 8.4% in independent activities. When working with skill related activities, students spent the greatest percentage of time in study skills/testtaking activities (11.7%) and in word identification activities (10.4%). Inclass students' time when working with text was spent in "after reading" activities (9.7%), or in "during reading" activities (7.0%).

There were no significant differences between pullout and inclass remedial settings in the amount of time that students spent on total text related work, although there were significant differences within some dimensions of that category. Students in the pullout remedial setting spent significantly more time on "during reading" activities while students in the inclass setting spent significantly more time in "after reading" activities. There was a significant difference between settings in the amount of time for skill related activities, with significantly more time spent in pullout settings on this dimension. There was significantly more time spent in pullout remedial settings on comprehension skills and speaking/listening skills. The data indicated greater variability in both the total text related and skill related aspects of lesson focus within the inclass remedial settings.

Types of materials. In the pullout remedial setting, students spent most of their time with workbooks or worksheets (34.3%), and then with tradebooks

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Insert table 3 about here

(13.0%) (see Table 3). In the inclass setting, students also spent the greatest percentage of their time with workbooks or worksheets (35.6%), but second with basal readers (20.5%).

There were significant differences between settings in the percent of time that students spent with various materials. Specifically, students spent significantly more time in the pullout remedial setting with tradebooks, student compositions, games and flashcards, while students in the inclass remedial setting spent significantly more time with the basal reader.

Levels of text. In the pullout remedial setting students spent more of their time with materials at the selection level (31.6%) than with materials

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Insert table 4 about here

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focusing at the word level (23.0%) (see Table 4). Students in the inclass remedial setting spent more time with materials at the word level (28.9%) than with materials at the selection level (22.6%). There were no significant differences between settings on the percent of time that students had experiences with different levels of text.

Student behaviors. The reading related behaviors in which students spent most of their time in the pullout setting were listening activities (27.6%), silent reading (17.9%), or transcribing activities (16.7%) such as filling in

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Insert table 5 about here

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blanks or copying. (see Table 5.) The three reading related behaviors that accounted for most of the students' time in the inclass remedial setting were listening (38.5%), transcribing (12.9%), and silent reading (8.6%).

The three activities accounting for over 60% of the students' time in both pullout and inclass settings were listening, transcribing, and silent reading. In the pullout setting, the time was somewhat more evenly

distributed among the three, whereas in the inclass setting, 38.5% of the time was spent in listening. Little time was spent in either setting on oral reading activities (6.5% in pullout; 3.9% in inclass), nor was much time spent in composing (production of student written material) (4.0% in pullout; .6% in inclass), although a significantly greater percentage of time was spent in the pullout setting in composing activities. Students in the pullout remedial setting also spent a significantly greater percentage of time than did students in the inclass setting in silent reading and "volunteering to respond" activities. There was a significantly greater percentage of time spent in the inclass setting in listening behaviors.

Discussion of Nature of Remedial Reading in the Two Settings.

Although prior research results have indicated that setting itself is not a factor in program effectiveness or student achievement (Archambault, 1986; Leinhardt & Pallay, 1982), setting did seem to have an effect on the nature of the instruction experienced by students in the two settings. Although there were clearly some similarities in the nature of remedial instruction experienced by students in the two settings, there were also some striking differences.

Similarities. One of the most frequently experienced activities in both settings was for students to be part of a group, indirectly receiving instruction from the teacher as he/she discussed the material with another child or children within the group (indirect interaction). Moreover, in both settings there was a large percentage of time in which students were not involved in instructional activities. In neither setting were students involved in many behaviors that required management activities on the part of the teachers. Neither group of students received much feedback or acknowledgement, nor were students read to frequently.

In terms of lesson focus, students in both settings spent a greater

percent of time on skill related tasks than on text related activities. In both settings, a similar percent of time was spent in independent activities. In neither setting was much time spent in prereading activities. In both settings, a similar percent of time was spent in word identification activities, vocabulary, and study skill/testtaking activities.

Students in both settings spent most of their time working with workbooks or worksheets. The focus in both settings was distributed across materials at levels of the word, sentence/paragraph, and selection.

Students in both settings spent the greatest percentage of their time in listening activities, and in both settings, students experienced similar amounts of time in transcribing (copying) activities. In neither setting did students spend much time in composing or in oral reading activities. There was not much time spent in either setting in off-task behavior, waiting, or volunteering.

Distinctive features of the pullout setting. The data from the pullout setting in this study in many ways confirm descriptions cited by others who have studied compensatory programs (Allington, et al, 1985; Allington & McGill-Franzen, 1988; Archambault, 1986). The focus on skill instruction was predominant, although the impact of recent research in reading that calls for more text related activities could be seen in the use of tradebooks and student writing. There was, however, little time spent in prereading or postreading activities as compared to time spent "during reading". This distribution of time does not reflect the current research regarding the need for students to participate in prediction (Hansen, 1981; Olshavsky, 1977) or elaboration activities (Hidi & Anderson, 1986; Linden & Wittrock, 1981; Morrow, 1985). Moreover, the percentage of time spent on listening as compared to reading, composing, or even discussion (talking) activities raises some questions about the appropriateness of this emphasis in

the remedial classes for these intermediate aged students. Nevertheless, these students did spend a larger percent of their time in teacher directed activities rather than in independent seatwork.

Distinctive features of the inclass setting. Students in the inclass setting experienced a greater percentage of time during which the teacher was working with individual students in a monitoring or tutoring mode. There was relatively more time during which scheduled instruction ceased or when there was no interaction between the reading specialist and student. Thirty nine percent of student time was spent on skill related activities, with the major emphasis on study skills or testing activities through the use of workbooks or worksheets. Students also spent relatively more time on lessons from the basal, with most of the focus on postreading activities. The greatest proportion of time was spent with materials at the word level. Students spent much of their time listening, transcribing, and reading silently.

The frequent experiences of students with basal materials was an expected finding in the inclass setting, since one of the reasons for the move to this type of setting was to promote congruence between the remedial and developmental programs. Moreover, the finding that students had more individual contacts with teachers was also expected, given that in most instances the reading specialists began working with students after the developmental teachers had completed their group lessons. However, the large amount of time in which students were not actually involved in reading related activities (scheduled instruction ceased, no interaction, transition) was not expected; nor was the finding that inclass students spent a relatively large percentage of time on skill work in workbooks or worksheets. Also, the great variability in the experiences of students in the inclass setting speaks to the differences in how this instructional program was implemented across

classrooms. The variability in all three dimensions studied (teacher behaviors, lesson, and student behaviors) seemed to reflect the attempts of the reading specialists in the inclass programs to find their own way and to develop their own style of working in the classroom with the student's developmental reading teacher.

Nature and Extent of Congruence

In this section, the findings relative to the question, "what is the nature and extent of congruence between the remedial and classroom reading programs across settings?", are presented.

A detailed description of the findings regarding congruence is reported elsewhere (Bean, et al, 1989). The mean percent of congruence per student using the congruence rating form, described earlier, was calculated for each lesson pair observed. The mean percent of congruence for students in the pullout setting was 20.3% (SD = 9.6); the mean percent of congruence for students in the inclass setting was 66.1% (SD = 17.3). There was significantly more congruence in the inclass settings ($p < .001$). These data indicate that the inclass setting, overall, led to more congruence between the classroom and remedial reading program. However, the greater variability in the inclass setting is an indication of the differences within the inclass remedial program as operationalized by the various reading specialists.

While the quantitative data reveal differences in congruence by setting, they do not tell the whole story. Observers' notes revealed differences in the nature of the congruence in pullout and inclass models. When congruence occurred in the pullout setting, it appeared to be happenstance or "serendipity"; that is, there was little indication that teachers had planned to teach lessons that complemented one another. (Time was obviously a factor in the pullout setting since these reading specialists were scheduled to teach at two or three schools a week.) Reading specialists in the pullout programs

seldom used the basal as the material for instruction. They most frequently taught teacher-directed lessons, focusing on comprehension skills or strategies. Student need did not appear to be the determining factor for these lessons, since similar lessons were used with all children in a group; several groups within a school; and in one case, across the two schools in which we observed the same reading specialist.

The variability in the inclass setting occurred at the school level rather than at the teacher level. In other words, the reading specialist operated in a similar fashion with the several teachers in a specific school. Reasons for the variability in the inclass setting can be attributed to the adaptations made by the reading specialists as they attempted to teach in the inclass setting. For example, in one school that had a high percentage of low congruence ratings, the reading specialist functioned as if in a pullout setting. She took the children to the back of the room where she conducted her own lessons, which were often different from those being implemented by the classroom teacher.

In another school with an inclass program, having a large percentage of high congruence ratings, the reading specialist went into the classrooms, talked with the classroom teachers about the lessons they were about to conduct, and then moved the Chapter I students to the back of the room where she taught the lessons that the classroom teachers would have taught to those students.

It was difficult, therefore, to generalize across schools regarding the congruence "model" used by reading specialists. Rather, we observed the following four models of implementation.

(a) Monitoring or Assisting. In this model, the reading specialist functioned as she was supposed to function according to district mandate (20 minutes of observation; 20 minutes of

teaching). When the specialist functioned in this fashion, she ususally spent her time in a monitoring or assisting role; e.g., students had been given a worksheet assignment by the developmental reading teacher and the reading specialist helped them complete their tasks. In only a few instances did the reading specialist initiate a lesson on her own. The outcome of this type of model was high congruence ratings.

(b) Aide. In this model, the reading specialist served primarily as an aide for the classroom teacher. The developmental teacher taught his/her lesson while the reading specialist observed. The specialist then moved through the classroom, offering help to the Chapter I students on an intermittent, as-needed basis. Few directed lessons were conducted by these specialists. This model also resulted in high congruence ratings.

(c) On-The-Spot. In this model, the reading specialist would go into the classroom, receive directions from the developmental teacher concerning the lesson focus and then immediately take the Chapter I students and conduct a parallel (similar) lesson for the full 40 minutes. Little advanced preparation was obvious, but the reading specialist would work with the students for the entire period and would conduct a teacher directed lesson similar to the one being taught to the non-Chapter I students by the classroom teacher. This model resulted in high congruence ratings between reading specialist and classroom teacher, but students were not receiving support, extension, or reinforcement from the RS; they were getting the classroom teacher's lesson from the reading specialist.

(d) "Pullback". In some schools, the reading specialist taught in

the classroom of the developmental teacher, but she brought in her own materials/lessons for the Chapter I students. At times, these lessons did relate to the focus of the classroom teacher, but frequently they did not. In these schools, the reading specialist tended to function in a similar fashion to the reading specialist in the pullout setting and conducted many teacher directed lessons. In this model, the congruence ratings tended to be low.

The Nature of the Total Reading Program for Chapter I Students

In this section, a discussion of the findings relative to the question, "what is the nature of the total reading program received by Chapter I students across settings?", is presented. Based upon raw counts from the SORIN, the frequency with which students experienced various activities was obtained and the mean percent for each frequency calculated. These mean percents were weighted by actual minutes per week spent with each teacher to determine, how remedial students spent their time in reading instruction with the classroom teacher and the reading specialist. These times were combined to determine the overall nature of the reading program of the students in the pullout and inclass settings.

How students spent their time, overall, in reading instruction in each program is discussed below. Time is presented in minutes per week to give a clearer picture of what a remedial student in each program experienced in reading instruction in one week's time. The mean number of minutes per week spent with the developmental teacher and the reading specialist as well as the mean total instructional time for students in each program is listed. Information is given concerning the amount of time students spent relative to various teacher behaviors, the focus of the lessons, and the observed student behaviors while in reading instruction.

Summary of Combined Developmental Teacher and Reading Specialist Observation Data

Teacher behaviors. Teacher behaviors are divided into instructional

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Insert table 6 about here

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and noninstructional behaviors. Students in pullout programs spent more time in reading activities than students in inclass programs (497.7 vs. 349.1 minutes per week, Table 6). Pullout students spent 340.0 minutes per week in instructional activities, 81.8 minutes in noninstructional activities, 73.5 minutes when scheduled instruction ceased, and 2.4 minutes out of the room. Inclass students spent 206.9 minutes per week in instructional activities, 96.8 minutes in noninstructional activities, 43.7 minutes when scheduled instruction ceased, and 1.7 minutes out of the room. The pullout students averaged more than two hours more time in instructional activities each week (133.1 minutes), fifteen fewer minutes per week in noninstructional activities, and 29.8 minutes more time when scheduled instruction ceased.

Of the 497.7 mean minutes of reading time, students in the pullout programs (PO) spent 340 minutes a week receiving some type of instructional input from their teachers in the following five activities (see Table 6):

1. Being listened to or watched by teacher while completing assigned work (teachers looked on as students completed worksheets) (83.3 minutes).
2. Receiving indirect instructional information while the teachers engaged another student in the group in instructional dialogue (66.3 minutes).
3. Receiving some type of content related information from teachers (64.9 minutes).
4. Engaging in questioning/answering dialogues with teachers (46.9 minutes), and
5. Listening to directions on how to complete assigned work (41.5 minutes).

Of the 349.1 mean minutes of total reading time for students in the inclass (IN) setting, 206.9 minutes were spent in instructional activities. The five most frequent types of instructional activities, which totaled 178.4 minutes were:

1. Receiving indirect information while teachers instructed another child in the group (45.7 minutes).
2. Questioning/answering dialogues (38.8 minutes).
3. Receiving content related information (34.7 minutes).
4. Being watched while completing assigned work (33.5 minutes), and
5. Receiving directions (25.7 minutes).

Lesson. In this section, mean number of minutes per week were looked at in terms of the amount of time students spent in designated instructional foci, the level of the instructional text, and the type of materials being used.

Lesson focus. For students in either PO or IN programs, most of the time was spent in skill related lessons (179.5 minutes for pullout and 136.5

Insert table 7 about here

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minutes for inclass) (see Table 7). In both PO and IN programs, the types of skill lessons most often engaged in during a week of instruction were study skill/testtaking activities (end of unit tests, preparation for CAT tests) (PO=61.1 minutes; IN=36.9 minutes), and comprehension activities (PO=47.3 minutes; IN=35.1 minutes). Word identification activities accounted for an additional 24.6 minutes for IN students, while vocabulary accounted for 31.8 minutes per week for PO students. In addition, PO students spent 51.1 minutes in independent work while IN students spent 45 minutes per week.

The PO student also received more time on text related lessons (139.1

minutes per week versus 91.8 minutes for IN). Of the total time spent in text related lessons, both the PO and IN students spent most of their time in "during reading" (actual reading of text) and "after reading" activities (100.2 minutes for PO, 68.0 minutes for IN). Little time in either setting was spent in preparation for reading the story by developing word knowledge, in eliciting prior knowledge, or in making predictions about content of the story to be read (18.9 minutes for PO; 12.3 minutes for IN).

Types of materials. Students in the inclass and pullout programs spent most of their total instructional week using the basal reader (PO=121.0

Insert table 8 about here

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minutes, IN=97.6 minutes) or using workbooks and worksheets (PO=141.0 minutes; IN=103.5 minutes) (see Table 8). Notable in the PO setting, was the additional time spent with tradebooks (PO=25.9 minutes; IN=3.0 minutes). Pullout students also spent more time with student written work (creating compositions, book reports, writing original sentences using vocabulary words) (PO=16.5 minutes; IN=4.1 minutes).

Levels of text. For students in pullout and inclass programs, the largest part of their total instructional time was spent with material at the

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Insert table 9 about here

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selection or text level (PO=175.3 minutes; IN=109.5 minutes) (see Table 9). Next, in amount of time spent, both pullout and inclass students experienced work at the word level (PO=95.6 minutes; IN=94.4 minutes).

Student behaviors. The three reading behaviors in which PO and IN students spent the greatest number of minutes per week were listening (to

their teachers, to other students) (PO=129.2 minutes; IN=139.0 minutes), transcribing (copying, filling in blanks) (PO=102.9 minutes; IN=45.3 minutes), and silent reading (PO=80.9 minutes; IN=46.2 minutes) (see Table 10). For all

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Insert table 10 about here

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students, waiting (for the next activity, for one's turn) (PO=21.7 minutes; IN=27.8 minutes) and off task behaviors (P=30.8 minutes; IN=24.2 minutes) were the next most frequent behaviors.

Discussion.

When looking at the total reading instructional time of remedial students, similarities and differences by setting were found. The similarities are discussed below, followed by distinctive features of the PO and IN settings. The major differences in reading experiences between PO and IN programs are then summarized.

Similarities in the nature of the total reading program across settings. With regard to interaction between student and teacher in both settings, students listened to their developmental and remedial teachers relay subject or content related information and received additional information indirectly when teachers spoke with other students in their group. Also in both settings, students spent large amounts of time during the lesson with no student/teacher interaction whatsoever (because the teacher was involved with preparing for the next lesson or grading papers); there was also a large amount of time in both programs when scheduled reading instruction ended early for one reason or another. Little time, on the other hand, was spent by students in either program on being read to, or in receiving feedback or acknowledgement.

With regard to lesson focus, both pullout and inclass students typically

spent their week completing worksheet and workbook activities related to comprehension or study/testtaking skills, either as part of a teacher directed lesson or as independent work. When focusing on text-related lessons, students in both settings, spent relatively more time reading selections from the basal (with little prior preparation for reading). After reading, they spent time demonstrating or extending comprehension through oral discussion, answering written comprehension questions from the book, or completing related materials. Materials used most often were the basal, or workbooks and worksheets focusing at the selection and word levels, respectively. Almost no time was spent in either program on composing or on rereading activities. In neither program did these intermediate aged students spend much time with content books or their own compositions.

When looking at commonalities across settings in student behaviors, listening emerges as the predominant behavior. Students spent a large amount of time, across both programs, in transcribing. In neither setting was much time spent on oral reading, composing, or speaking.

Finally, across both settings, there was a large number of minutes during which scheduled instruction ceased. This occurred when instruction ended early, independent work was completed and there was still time left in the period, or because of assemblies, guest speakers, taking of class pictures, holiday parties, or other special events.

Distinctive features of total reading instruction in the pullout program. Students in this program most often received instructional information from both teachers either as part of the group or indirectly when the teacher gave content information to other students. After giving the necessary information, teachers often let students complete the work, offering help when needed, but watching them work.

In terms of lesson focus, materials used, and the level of the materials,

PO students typically spent relatively more time in study skill testtaking, and comprehension activities using worksheets and workbooks focused at the word level. Pullout students spent less time reading than in doing skill activities. Much more time was spent in silent reading with the classroom teacher than with the reading specialist, due in part to the increased amount of time spent with the classroom teacher. When a text related lesson was conducted it most often was focused on during and after reading activities, but students did receive some prereading activities from the developmental teacher. The reading specialist provided children with additional opportunities for reading text through use of tradebooks.

Distinctive features of total reading instruction in the inclass program. In terms of teacher behaviors experienced in this setting, students received most of their content or subject information indirectly while the teachers gave information to other students in the group. There was a wider range of instructional teacher behaviors exhibited in this program and also a greater amount of no student/teacher interaction. Moreover, there was also a greater proportion of time (as compared to PO) used for transition. Part of the range of these behaviors may have occurred because of the two teachers in the classroom and the need to accommodate and modify the instructional environment.

Most of the students' instructional time was spent on skill work (45% more time than was spent with text). Textual lessons in inclass programs were accomplished with basal materials. Much more time was spent in activities after reading a selection then in prereading or "during" reading activities.

Students spent most of their time listening, reading silently, or transcribing. There was little student time spent on oral reading, composing, or speaking.

Summary of differences in nature of total reading program.

The most stiking difference between the two settings in this study is that the PO students experienced an additional 133 minutes of reading instruction each week. As a result of this, PO students spent more time in the various reading activities. They spent relatively more time on text-related lessons than IN students, and less time in noninstructional activities during lessons. The PO students also had more time when scheduled instruction ended early, so that their combined noninstructional time, scheduled instruction ceased, and time out of room was slightly more than for IN students.

There was much more time in IN settings when there was no teacher-student interaction. Further analysis of the results are needed to more clearly delineate important differences in the two settings and to identify dimensions about which school district administrators should be concerned when implementing their classroom and remedial reading programs.

A consistent result across both programs was the relatively small amount of time students spend in oral reading, composing their own written work, rereading material, and receiving feedback or acknowledgement from their teachers. More time was spent on each of these activities in PO settings, but that may be an artifact of the additional available time.

Effect of Total Program on Reading Achievement

The data analysis to address the final question of this study, "what is the effect of the total reading program on year-end achievement for Chapter I students?", is described below.

The model used to explain reading performance assumed that the final reading performance of a student is a function of his/her initial reading performance, the cumulative reading-related experiences of the student, and the overlap between the reading curriculum and the test (see Figure 1).

Insert figure 1 about here

In developing this model for reading improvement of low achieving students, several assumptions were made. First, we assumed that what a teacher does with students is more important than where those activities take place. Therefore, although reading instruction delivered by reading specialists was studied in two settings (pullout and inclass), setting itself was not a variable in the model. Second, we assumed that to capture teaching practices that affect reading improvement, it was necessary to document how students spent their reading time with both the classroom reading teacher and the reading specialist. Finally, we assumed that an additional important factor in the progress of remedial reading students was the extent to which the two teachers planned and cooperated in meeting the reading needs of their shared students, and the extent to which this communication led to congruence between the reading programs delivered to the student by the teachers.

The regression analysis, therefore, utilized the following scores for

Insert table 11 about here

each student: pretest, mean minutes/week spent in instructional activities with teachers, lesson focus, reading behaviors, total overlap of curriculum with the posttest objectives, and mean percent of congruence (see Table 11). Only the pretest significantly predicted end of year reading achievement ($B=.511$, $p < .0001$). This was not unexpected, as none of the other predictor variables was significantly related to either the pretest or posttest. The correlation between pretest and posttest was .4889 ($p < .0001$). Even though a high proportion of posttest variance was not predicted by the pretest, there

was relatively little end of year reading variance accounted for by the other variables. The reasons why these variables did not help to explain reading achievement growth during this year will be a focus of the continuing analyses of these results.

CONCLUSIONS AND IMPLICATIONS

In the following sections, conclusions and implications relative to each of the research questions are discussed.

Question 1. What is the nature of remedial reading instruction across settings?

There were significant differences between settings on various dimensions of remedial reading teacher behaviors, lesson focus, and student behaviors. The pullout and inclass settings created different roles for the reading specialist and different experiences for students. However, the inclass setting did not guarantee similarities within that setting as to how time would be spent: there was much more variability across the three dimensions in the inclass settings. Setting, as it was implemented in this district, had an impact on how remedial reading specialists organized lessons, on what students experienced, and on the behaviors of the students within that setting.

The movement across the country for greater integration of students into regular education programs speaks to the need for a new vision for compensatory programs. As school district personnel search for means by which they can achieve this vision, the solution of changing setting (from pullout to inclass) appears to be much more complex and perhaps more difficult to implement effectively than one would hope. There are two points that need to be made regarding the findings of this study. First, setting can make a difference in terms of what students experience in compensatory education and that difference is not necessarily in the desired direction. There is a continued need to study the nature of the instruction in inclass and pullout

programs. Specifically, there is a need to move beyond the percentage of time allocated to various activities to an investigation of the nature of the instructional activities in a rich, qualitative manner (e.g., what were the explanations of the teachers in the instructional interactions? What sorts of activities were going on prior to reading? In what ways were students actively involved in the lesson?) Studies of instruction and explanation should be conducted in various compensatory education settings and at various levels of student ability/grade so that questions regarding the effects of these variables can be addressed.

Second, inclass models are not easy for remedial reading specialists to implement. The variability in the functioning of the reading specialists in this study speaks to their struggle to "fit" into the classroom regimen. Given the focus and emphasis on integration of reading activities and the movement to alternative models for compensatory programs, it is imperative that reading specialists be given training for the resource or consultant teacher role. Moreover, there is a possible need for classroom teachers to be involved in staff development programs that would strengthen their abilities to work with another adult(s) in the classroom.

Questions regarding the appropriate role for the reading specialist need to be included in educational agendas. Although there is much enthusiasm for the "ideology of supportiveness" (Fraatz, 1987) from those who believe that the strongest compensatory program is one in which the specialist serves in a secondary or supportive role to the classroom teacher, there is still much to be learned about the appropriateness and effectiveness of this notion as well as how it can best be implemented in the total school reading program to improve reading instruction for students.

Question 2. What is the nature and extent of congruence between the remedial and classroom reading programs across settings?

Congruence between the curriculum and instruction of developmental teachers and reading specialists was greater in the inclass than pullout programs, although the nature and extent varied greatly within the various inclass settings. Curriculum and instruction in pullout settings tended to be based upon general rather than specific needs of remedial students (e.g., comprehension, study skills). This is consistent with Allington's (1985) description of remedial instruction as "all-purpose", and with the findings in Haynes and Jenkins's (1986) study of the instruction provided for special education students in their resource and regular classrooms. In this study, actual teaching of strategies and skills was observable in pullout settings, however, the specific content or curriculum did not tend to be integrated with what was being implemented in the regular classroom, nor was it determined by specific needs of individual students.

Most often in inclass settings, there appeared to be more concern for completion of assignments or mastery of a specific skill introduced by the developmental teacher than for what might be called "long term" reading goals, or needs of individual students. This focus on mastery certainly led to more congruence but not necessarily to more or better instruction for students.

In neither setting was mutual classroom teacher/reading specialist planning obvious. In the inclass setting, generally, there was not effective use of specialist expertise and knowledge of reading instruction; rather the specialists functioned in a secondary or supporting role. As discussed previously, this "ideology of supportiveness" may constrain reading specialists from providing appropriate instruction for students, and instead encourage replication of classroom patterns and purposes to the detriment of student progress. Specifically, if congruence is to be a primary factor in compensatory programs, there is a need to explore what the nature of this congruence should be if it is to affect achievement in a positive manner.

Question 3. What is the nature of the total reading program received by Chapter I students across settings?

In the school district studied, the implementation of an inclass program resulted in differences in the total amount of reading instruction received by remedial reading students. In fact, students in the inclass model received an average of 133 fewer minutes per week of reading instruction experiences then did students in the pullout setting (almost 150 fewer minutes of actual reading time). Therefore, it was expected that students in the pullout setting would experience more time across the many different reading dimensions studied. However, the nature of those experiences in both inclass and pullout programs tended to be quite similar; that is, students still spent a great amount of time in skill related activities, specifically working with worksheets or basal readers. In both programs, the greatest amount of student activity was listening. In other words, the inclass setting did little to change the nature of the total instructional program experienced by students. Across both settings, the total program appeared to be similar to what could be called a traditional skills focused curriculum (Winograd & Greenlee, 1986). In this particular school district, some of the similarities between programs resulted from curriculum constraints and related testing accountability as perceived by teachers. Classroom teachers across both programs implemented a basal curriculum in a similar manner at a similar pace regardless of setting. The greatest difference, in fact, appeared to be the reduction in the total amount of time that students experienced various activities.

An important point, however, is that there was greater variability in the dimensions observed during both developmental and remedial reading instruction in the inclass program, some of which may be attributed to the accommodation that occurred when two teachers were in the same room. It appears as though the additional teacher (reading specialist) in the classroom may have affected

the behavior of the classroom, or developmental, teacher, in contrast to the behavior of the developmental teacher in the pullout setting. Also, students in the inclass program spent more time in noninstructional lesson activities, while students in the pullout setting experienced more time when instruction ended early. Again, the types of accommodation and coordination necessary when two teachers work together need to be considered when developing and implementing a model that places an additional adult(s) in the classroom. Moreover, the effects of such programs need continued study.

Question 4. What is the effect of the total reading program on year-end achievement for Chapter I students?

The lack of significance of any of the instructional variables that were hypothesized to predict achievement leads us to a continuing reanalysis of the data. Several important issues need to be considered in discussing this finding. First, the fact that all of the students in the sample were reading below the 30th percentile on the standardized test resulted in a restricted range of achievement that decreased reading achievement variance and associated relationships with the instructional variables.

Second, we have some concerns about the small amount of time that students in either setting experienced oral or silent reading activities, behaviors that have been identified in past studies as variables that predict student achievement (Leinhardt, Zigmond, & Cooley, 1981; Haynes & Jenkins, 1986). Finally, there is a continued need to rethink and reanalyze the dimensions that we believe influence reading achievement. For example, in the analysis presented in this paper, the following five dimensions were included as instructional behaviors: giving information, giving directions, question/answering, reading to students, and individual contacts. We are currently in the process of rethinking which of these variables may have a direct impact on achievement and reanalyzing the data on those bases.

Overall Conclusions/Implications

The critical issue resulting from this study is that although the nature of instruction, and hence, placement in one setting or another, did not appear to influence achievement, there were differences in the amount of total instructional time and in the instructional behaviors, lesson focus, and reading behaviors experienced by students across the two programs (PO and IN). Therefore, personnel responsible for implementing compensatory programs need to consider carefully what they value in reading and what curricula and instruction they believe are critical components regardless of the model used for the remedial program. Along these same lines, in districts that use the basal as the curriculum, teachers need to be made aware of their role as decision-makers in modifying or adapting the curriculum to the needs of their students who are experiencing reading difficulties. Consideration should also be given to ways in which the developmental and remedial programs should be similar and ways in which they should differ. Congruence, as a concept, needs to be carefully defined and studied, and then both types of teachers (classroom and reading specialists) need to be given the help necessary to improve reading instruction for remedial students.

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Table 1

Percentage of Time Students were Recipients of Various Teacher Behaviors in Remedial Classes with Reading Specialists

	Pullout		Inclass		
	Mean %	SD	Mean %	SD	t-Value
Instructional					
Giving Information	11.7	5.4	8.5	9.2	2.35
Giving Directions	7.3	5.0	2.9	5.5	4.43***
Questioning/Answering	10.4	10.9	5.3	8.4	2.85**
Reading to Students	4.6	6.8	1.9	4.0	2.51
Individual Contacts	5.1	6.8	10.8	13.6	-2.94**
Listening/Looking	21.2	9.6	10.2	11.0	5.77***
Indirect Interaction	14.9	11.5	17.0	14.2	-0.89
Feedback/Acknowledgement	2.9	4.5	0.5	1.7	3.72***
Total Instructional	**78.1**	**9.2**	**57.1**	**13.2**	**10.04*****
Noninstructional					
Transition	1.6	2.7	4.2	5.0	-3.51***
No Interaction	2.9	5.5	11.3	17.1	-3.69***
Behavior Management	0.9	1.6	0.6	2.2	0.90
Noninstru. Interaction	0.3	1.6	1.1	2.4	-2.14
Total Noninstructional	**5.7**	**7.6**	**17.2**	**15.3**	**-8.22*****
Sch. Inst. Ceased	16.1	6.5	25.6	13.7	-4.93***
Out of Room	0.0	0.0	0.4	0.3	-1.00

*** $p < .001$
** $p < .01$

Table 2

Percentage of Time Students Spent on Aspects of Lesson Focus in Remedial Classes with Reading Specialists

	Pullout		Inclass		
Lesson Focus	Mean %	SD	Mean %	SD	t-Value
No Focus	1.4	3.3	2.3	4.2	-1.35
Text Related					
Before Reading	1.7	2.8	1.9	4.9	-0.28
During Reading	15.2	14.2	7.0	12.1	3.39***
After Reading	2.9	4.8	9.7	12.0	-4.14***
Rereading	0.1	0.4	1.6	4.9	-2.56
Other	0.3	1.2	0.6	2.0	0.97
Total Text Related	**20.2**	**16.8**	**20.8**	**22.2**	**-0.16**
Skill Related					
Word Identification	10.3	11.4	10.4	12.9	-0.07
Vocabulary	5.8	7.7	5.7	8.5	0.04
Comprehension	15.8	14.5	7.8	8.3	3.58***
Study Skills/Testtaking	9.8	14.6	11.7	18.1	-0.60
Spelling/Grammar	1.7	3.4	1.9	5.4	-0.21
Composing	5.7	10.4	1.8	5.1	2.48
Speaking/Listening	0.9	1.7	0.0	0.0	3.68***
Total Skill Related	**50.0**	**14.4**	**39.4**	**19.9**	**3.24****
Independent Work	7.1	9.9	8.4	10.1	-0.71
Sch. Inst. Ceased	20.0	5.9	28.7	13.9	-4.53***
Out of Room	1.4	6.0	0.5	2.3	1.03

*** $p < .001$

** $p < .01$

Table 3

Percentage of Time Students Spent with Various Types of Materials in Remedial Classes with Reading Specialists

	Pullout		Inclass		
Material	Mean %	SD	Mean %	SD	t-Value
Basal	5.5	10.9	20.5	20.8	-5.01***
Tradebook	13.0	14.8	0.3	2.4	6.16***
Content Text	1.4	4.2	0.6	4.2	0.96
Student Writing	6.8	8.7	1.5	4.2	4.01***
Chalkboard/Charts	5.0	10.3	1.3	3.7	2.53
Visuals/Tapes	0.2	1.1	0.0	0.0	1.42
Workbook/Worksheets	34.3	17.2	35.6	22.3	-0.37
Games/Flashcards	5.6	8.9	1.8	4.5	2.78***
No Materials	2.1	4.3	2.2	4.2	-0.13
Other	5.0	8.2	7.0	10.7	-1.08
Sch. Inst. Ceased	20.0	5.9	28.7	13.8	-4.57***
Out of Room	1.3	6.0	0.5	2.4	0.90

*** $p < .001$

** $p < .01$

Table 4

Percentage of Time Students Spent with Various Levels of Text in Remedial Classes with Reading Specialists

	Pullout		Inclass		
Level of Text	Mean %	SD	Mean %	SD	t-Value
Word Level	23.0	20.5	28.9	17.8	-1.67
Sentence/Paragraph	19.3	16.0	16.6	16.2	0.92
Selection	31.6	19.9	22.6	20.1	2.44
Not Applicable	4.5	7.4	2.7	4.8	1.53
Sch. Inst. Ceased	20.0	5.9	28.7	13.9	-4.54***
Out of Room	1.5	6.1	0.5	2.3	1.11

*** $p < .001$

Table 5

Percentage of Time Students Exhibited Various Reading Related Behaviors in Remedial Classes with Reading Specialists

	Pullout		Inclass		
Reading Related Behaviors	Mean %	SD	Mean %	SD	t-Value
Silent Reading	17.9	17.9	8.6	17.0	2.86**
Oral Reading	6.5	6.2	3.9	7.6	2.00
Composing	4.0	9.0	0.6	2.4	2.66**
Transcribing	16.7	11.1	12.9	13.4	1.66
Listening	27.6	18.3	38.5	21.4	-2.92**
Speaking	6.8	6.0	5.4	8.6	1.04
Off Task	2.8	4.4	2.8	5.0	-0.01
Volunteering	3.5	4.7	1.4	4.1	2.64**
Waiting	3.6	4.8	5.5	8.5	-1.58
Sch. Inst. Ceased	8.8	8.2	19.7	12.7	-5.61***
Out of Room	1.8	6.5	0.6	2.4	1.25

*** $p < .001$

** $p < .01$

Table 6

Mean Minutes/Week Students were Recipients of Various Teacher Behaviors in their Developmental, Remedial, and Both Reading Classes

	Pullout			Inclass		
Instructional	DT	RS	Total	DT	RS	Total
Giving Information	53.2	11.7	64.9	30.6	4.1	34.7
Giving Directions	34.2	7.3	41.5	24.3	1.4	25.7
Quest/Answering	36.5	10.4	46.9	36.2	2.6	38.8
Reading to Students	6.3	4.6	10.9	11.8	0.9	12.7
Individual Contacts	14.5	5.1	19.6	8.5	5.2	13.7
Listen/Looking	62.1	21.2	83.3	28.5	5.0	33.5
Indirect Interaction	51.4	14.9	66.3	37.5	8.2	45.7
Feedback/Acknow.	3.7	2.9	6.6	1.8	0.2	2.0
Total Instr.	**261.9**	**78.1**	**340.0**	**179.3**	**27.6**	**206.9**
NonInstructional						
Transition	9.8	1.6	11.4	12.6	2.0	14.6
No Interaction	50.2	2.9	53.1	72.6	5.5	78.1
Beh. Management	9.8	0.9	10.7	1.3	0.3	1.6
Non Inst. Inter.	6.3	0.3	6.6	1.9	0.6	2.5
Total Non Instr.	**76.1**	**5.7**	**81.8**	**88.4**	**8.4**	**96.8**
Sch. Inst. Ceased	57.4	16.1	73.5	31.3	12.4	43.7
Out of Room	2.4	0.0	2.4	1.7	0.0	1.7
Total Time	**397.8**	**99.9**	**497.7**	**300.7**	**48.4**	**349.1**

Table 7

Mean Minutes/Week Students Spent on Aspects of Lesson Focus in their Developmental, Remedial, and Both Reading Classes

	Pullout			Inclass		
	DT	RS	Total	DT	RS	Total
No Focus	10.2	1.3	11.5	16.1	1.1	17.2
Text Related						
Before Reading	17.2	1.7	18.9	11.4	0.9	12.3
During Reading	42.7	15.2	58.0	21.7	3.4	25.0
After Reading	39.3	2.9	42.2	38.3	4.7	43.0
Rereading	2.0	0.1	2.1	5.1	0.8	5.9
Other	17.7	0.3	18.0	5.2	0.3	5.5
Total Text	**118.9**	**20.2**	**139.1**	**81.7**	**10.1**	**91.8**
Skill Related						
Word Ident.	8.6	9.9	18.5	19.6	5.1	24.6
Vocabulary	26.2	5.6	31.8	11.2	2.8	14.0
Comprehension	33.7	13.6	47.3	31.3	3.8	35.1
Study/Testtaking	51.3	9.8	61.1	31.2	5.7	36.9
Spell/Grammar	7.2	1.4	8.6	10.1	0.9	11.0
Composing	3.3	5.7	9.0	6.3	0.9	7.2
Speak/List.	2.3	0.9	3.2	7.7	0.0	7.7
Total Skill	**132.6**	**46.9**	**179.5**	**117.3**	**19.2**	**136.5**
Ind. Work	45.9	5.2	51.1	40.9	4.1	45.0
Sch. Inst. Ceased	66.6	18.9	85.5	42.3	13.9	56.2
Out of Room	3.4	1.3	4.7	2.3	0.2	2.5

Table 8

Mean Minutes/Week Students Spent with Various Materials in their Developmental, Remedial, and Both Reading Classes

	Pullout			Inclass		
	DT	RS	Total	DT	RS	Total
Basal	115.5	5.5	121.0	87.7	9.9	97.6
Tradebook	14.6	11.3	25.9	2.8	0.2	3.0
Content	3.8	1.4	5.2	7.1	0.3	7.4
Stud. Writing	9.7	6.8	16.5	3.4	0.7	4.1
Chalk/Charts	11.8	5.0	16.8	11.9	0.6	12.5
Visuals/tapes	3.2	0.2	3.4	5.8	0.0	5.8
Workbook/Sheets	108.8	32.3	141.1	86.2	17.3	103.5
Games/Flashcards	0.5	4.7	5.2	0.1	0.9	1.0
No Materials	8.2	2.1	10.3	23.0	1.1	24.1
Other	30.9	4.4	35.3	28.0	3.4	31.4
Sch. Inst. Ceased	66.6	18.9	85.5	42.5	13.9	56.4
Out Of Room	4.1	1.3	5.4	2.3	.3	2.6

Table 9

Mean Minutes/Week Students Spent With Various Levels of Text in their Developmental, Remedial, and Both Reading Classes

	Pullout			Inclass		
	DT	RS	Total	DT	RS	Total
Word Level	75.3	20.3	95.6	80.4	14.0	94.4
Sent/Par.	58.1	18.1	76.2	58.9	8.1	67.0
Selection	144.7	30.6	175.3	98.6	10.9	109.5
Not App.	29.4	4.6	34.0	18.0	1.3	19.3
Sch. Inst. Ceased	66.6	18.9	85.5	42.5	13.9	56.4
Out Of Room	3.4	1.5	4.9	2.3	0.2	2.5

Table 10

Mean Minutes/Week Students Exhibited Various Reading Related Behaviors in their Developmental, Remedial, and Both Reading Classes

	Pullout			Inclass		
	DT	RS	Total	DT	RS	Total
Silent Reading	64.4	16.5	80.9	42.0	4.2	46.2
Oral Reading	6.6	6.2	12.8	3.9	1.9	5.8
Composing	7.4	4.0	11.4	5.1	0.3	5.4
Transcribing	87.9	15.0	102.9	39.1	6.2	45.3
Listening	102.7	26.5	129.2	120.3	18.7	139.0
Speaking	13.7	6.0	19.7	11.3	2.6	13.9
Off Task	28.0	2.8	30.8	22.8	1.4	24.2
Volunteering	12.7	3.4	16.1	9.1	0.7	9.8
Waiting	18.2	3.5	21.7	25.1	2.7	27.8
Sch. Inst. Ceased	30.9	8.3	39.2	18.0	9.6	27.6
Out Of Room	5.1	1.6	6.7	4.0	0.3	4.3

Table 11

Regression of Post-test on all Predictors (n=96)

Predictors	Beta	t	Prob.
Pretest	.511	5.64	<.0001
Instruction	.047	.33	.7416
Rdg. Behaviors	.010	.09	.9323
Lesson Focus	-.074	-.58	.5645
Total Overlap	.027	.28	.7793
Percent Congruence	-.075	-.73	.4703
Constant		5.37	<.0001

R^2 = .29

Pretest — Total reading score from the 1987 California Achievement Test for each student.

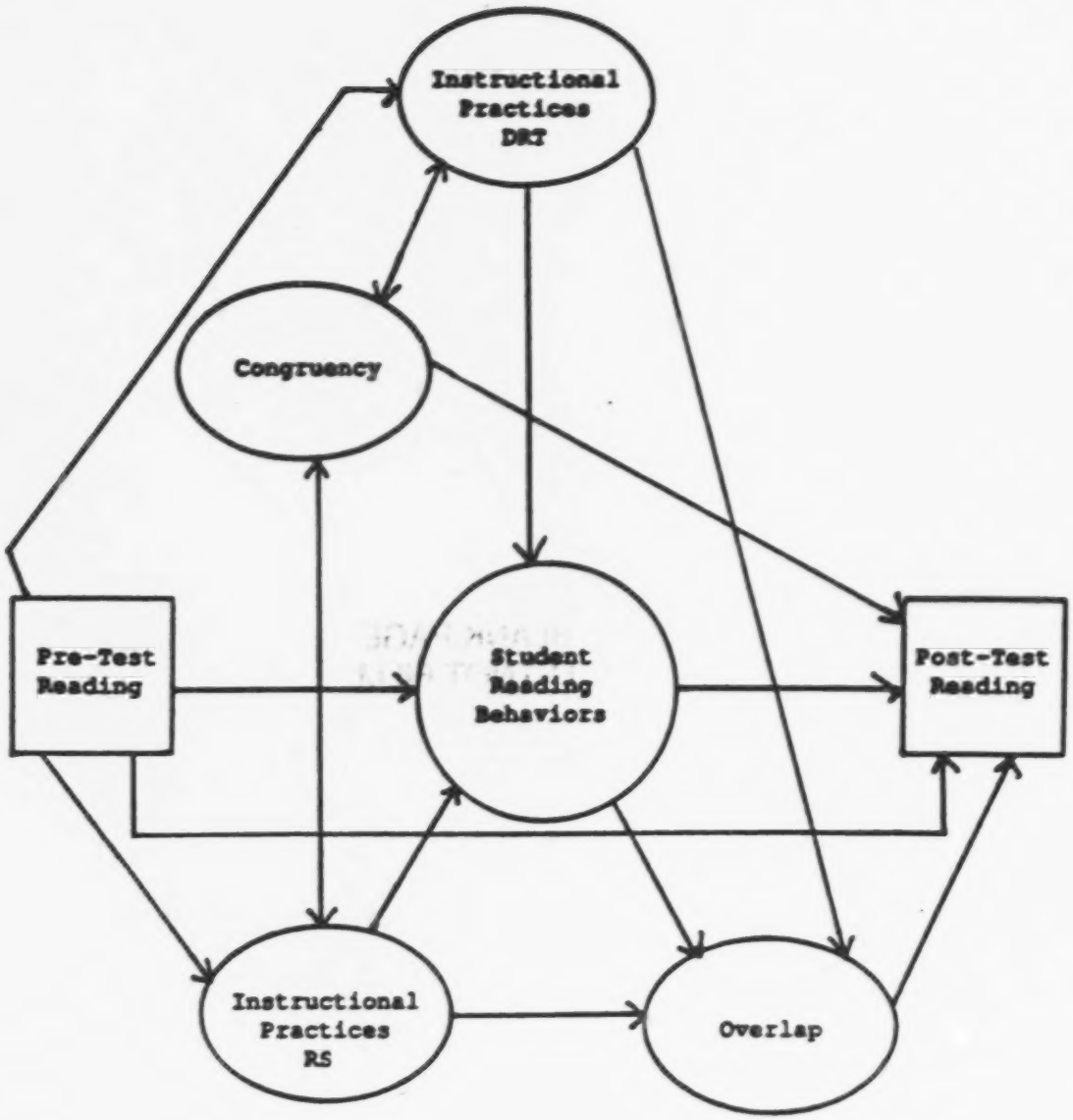
Instructional Practice — Combined mean number of minutes spent each week in instructional activities (giving information, giving directions, question/answer, reading to students, individual contacts) with a developmental teacher and reading specialist.

Reading Behaviors — Combined mean number of minutes spent each week in silent and oral reading with a developmental teacher and reading specialist.

Lesson Focus — Combined mean number of minutes spent each week in text related and skill related lessons with a developmental teacher and reading specialist.

Percent Congruence — Mean percent of congruence for each student between lessons of developmental teacher and reading specialist.

Total Overlap — Percent of the curriculum of either the developmental teacher or the reading specialist that overlapped with CAT objectives (teacher estimate).



Key

DRT = Developmental Reading Teacher
RS = Reading Specialist in pullout or in-class setting

Figure 1

Model for Explaining Reading Achievement